

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Raymond S. Barsness, et al.
Serial No.: 09/801,309
Filed: March 7, 2001
For: SUBJECT/OBSERVER UPDATE CONTROL METHOD AND
APPARATUS
Group Art Unit: 2145
Confirmation No.: 2651

APPEAL BRIEF IN SUPPORT OF APPEAL FROM
THE PRIMARY EXAMINER TO THE BOARD OF APPEALS

Mail Stop Appeal Brief - Patents
Commissioner for Patents
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Sir:

Applicant(s) hereby submit an appeal brief in support of the appeal to the Board of Appeals from the decision dated February 6, 2007, of the Primary Examiner finally rejecting claims 1-5, 7-11, 13-17, and 19-26.

The appeal brief fee of \$500.00 is:

- ☐ Enclosed.
- ☒ Not required. (Fee paid in prior appeal.)
- ☐ Charged to Deposit Account No. 09-0465. A duplicate copy of this sheet is enclosed.

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1. Real Party in Interest

The real party in interest is International Business Machines, Inc., the assignee of the above-identified application.

2. Related Appeals and Interferences

On September 2, 2005, Applicant initially appealed from the final rejection of all pending claims under Section 102(e) based on Patent No. 6,721,740 ("Skinner"). In response to Applicant's Appeal Brief, the Examiner withdrew the Section 102(e) rejections, acknowledging that Skinner does not disclose "the configuration information comprising an attribute of the observer" or "to selectively communicate the update information to the observer based on the configuration information" or "the configuration information comprising an attribute of the observer." *Office Action, mailed July 18, 2006 at pg. 5 and pg. 13.*

3. Status of Claims

Claims 1-5, 7-11, 13-17, and 19-26 are currently pending. The Examiner issued final rejections of claims 1-5, 7-11, 13-17, and 19-26 on February 6, 2007. More specifically, the Examiner: (i) rejected claims 19-22 under 35 U.S.C. § 101; and (ii) rejected claims 1-5, 7-11, and 19-26 under 35 U.S.C. § 102(e) as being anticipated by Patent No. 6,721,740 ("Skinner"). The Examiner appears to have only renewed the section 102(e) rejections in the Advisory Action mailed February 24, 2007.

Applicant appeals the final rejections of claims 1-5, 7-11, 13-17, and 19-26.

4. Status of Amendments

Applicant amended claim 19 as part of its response filed on April 4, 2007. The Examiner entered this amendment as part of the Advisory Action mailed on April 24, 2007.

Applicant amended claims 1, 4, 8, 10, 13, 16-17, and 19 in its Response mailed December 27, 2004. The Examiner entered these amendments as part of the Office Action mailed June 3, 2005.

5. Summary of Claimed Subject Matter

Claim 1 is directed at a data processing system comprising a subject, an observer associated with the subject and adapted to generate configuration information, and a transmission manager associated with the subject. The transmission manager may be adapted to receive the configuration information from the observer and to selectively communicate update information to the observer based on the configuration information. The configuration information comprises an aspect of the observer. *E.g., pg. 4, lines 12-17; pg. 8, lines 4-14; Figure 3.* In addition, claim 1 requires an aspect object created by the observer and adapted for attachment to the subject, the aspect object further adapted to receive the configuration information from the observer and to selectively communicate the update information to the observer based on the configuration information. *E.g., pg. 9, lines 4-14; Figures 2-3.*

Claim 4 further requires that the attribute of the observer include a communication speed indication. *E.g., pg. 8, lines 5-7 and 18-21.*

Claim 5 further requires that the transmission manager accumulate the update information in response to the communication speed indication. *E.g., pg. 10, lines 3-10.*

Claim 10 is directed at a distributed computer system comprising a subject code segment resident on a first computer node and an observer code segment resident on a second computer node, the first computer node being in operable communication with the second computer node. The subject code segment may be adapted to produce a status update message. This system may further comprise an aspect code segment coupled between the subject code segment and the observer code segment. The aspect code segment may be configured to detect information associated with a message and to selectively communicate the message from the subject code segment to the observer code segment based at least in part upon an attribute of the observer and the detected information. *E.g., pg. 4, line 18 - pg. 5, line 4; pg. 8, lines 4-14; Figure 3.* In addition, claim 10 requires an aspect object created by the observer and attached to the subject code segment, the aspect object configured receive the update message from the subject code segment and to selectively communicate update information to the observer based at least in part upon an attribute of the observer and the received information. *E.g., pg. 9, lines 4-14; Figures 2-3.*

Claim 13 and claim 19 are directed at a method of communicating updates from a subject to an observer comprising sending configuration information from the observer to an aspect, the configuration information comprising an attribute of the observer; notifying the aspect of an update; interrogating the update to generate update information, and selectively communicating the update to the observer based on a comparison between the update information and the configuration information. *E.g., pg. 5, lines 5-12; pg. 8, lines 4-14; Figure 3.* In addition, claims 13 and 19 require “in an observer, generating instructions to create an aspect object” and “communicating configuration information from the observer to the aspect object, the configuration information comprising an attribute of the observer” and “attaching the aspect object to a subject.” *E.g., pg. 9, lines 4-14; Figures 2-3.*

Claim 23 is directed at a method of maintaining data consistency between a subject object on a first computer system and an observer object on a second computer system, comprising generating an aspect object, communicating configuration information from the observer object to the aspect object, the configuration information including a desired type indicator and a desired communication rate indicator; attaching the aspect object to the subject object; and in response to a state change indication from the subject: 1) sending an update to the aspect; 2) interrogating the update to generate an update type indicator; 3) modifying the update based on a comparison between the update type indicator and the desired type indicator to produce a modified update; 4) sending the modified update to an accumulator; 5) using the desired communication rate indicator to determine whether the object is ready to receive the modified update; and 6) communicating the modified update to the observer. *E.g., pg. 4, line 12 - pg. 5, line 20; pg. 8, line 4 - pg. 10, line 17; Figure 3.* In addition, claim 23 requires “in an observer object, generating instructions to create an aspect object” and “communicating configuration information from the observer object to the aspect object, the configuration information including a desired type indicator and a desired communication rate indicator; attaching the aspect object to the subject object.” *E.g., pg. 9, lines 4-14; Figures 2-3.*

6. Grounds of Rejection to be Reviewed on Appeal

Applicant appeals all final rejections. More specifically, Applicant appeals: (i) the Examiner's contention that all of the elements in claims 1-5, 7-11, 13-17, and 19-26 are anticipated by Patent No. 6,721,740 ("Skinner"); and (ii) the Examiner's contention claims 19-22 are directed at non-statutory subject matter.

Applicant expressly states that the rejected claims do not stand or fall together. For purposes of this Appeal: Group A comprises claims 1-5, 7-11, 13-17, and 19-26; Group B comprises claims 4-5 and 23; and Group C comprises claims 19-22.

7. Argument

In conventional subject-observer systems, each subject maintained a list of observers and, when the subject's state changed, notified each observer of its state change. This notification occurred regardless of the observer's particular interest or the observer's capacity to handle the update. The observers would then request the updated information, again regardless of the observer's particular interest or the observer's capacity to handle the update. The subject's updates are then issued, only to be discarded by that observer. This drawback made conventional designs inflexible and inefficient, particularly in modern "distributed" systems because the remote messages are comparatively slow. *Pg. 2, lines 7-13.* That is, when objects reside on different computer systems, the distributed system manager must send messages between those systems. These inter-system messages are sent at a much slower rate than intra-system messages. This drawback can make it computationally expensive to maintain data consistency across the distributed system. *Pg. 2, line 14 - pg. 3, line 2.*

Another drawback with conventional subject/observer systems is that the subject object controls the message transmission rate. Frequently, an observer object running on a heavily burdened system may not be able handle updates from the subject object at this rate. This drawback can cause a bottleneck at one processor that can cascade to other processors and cause them to cause them to become backed-up as well. *Pg. 3, lines 3-7.*

Yet another drawback of conventional design is that each subject frequently needs to simultaneously maintain several different types of relationships, and therefore to exchange different data for each type of relationship. In an effort to support these different relationships, conventional methods forced the subject object to support multiple attach/detach interfaces and to maintain multiple observer lists. This approach, however, was not extendable and frequently caused "code bloat." *Pg. 3, lines 8-13.*

The present invention overcomes these drawbacks by introducing observer defined and controlled aspects into a subject/observer implementation. *Pg. 4, lines 2-3.* In operation, each observer in some embodiments creates one or more aspects and attaches the aspects to the subject using a predefined set of attach/detach methods. *Pg. 8, lines 4-5.* These aspects include

information about what specific type of information the observer wants, what form the information should be sent, and how frequently the information should be sent. *Id. at lines 5-7.* When the subject changes its state, it produces an update message and sends the message to the attached aspects. *Id. at lines 7-9.* If the update is the type that the observer is interested, the aspect sends a message to the subject instructing it to send updated information to the observer. *Id. at lines 9-10.*

In some cases, this message may also instruct the subject to send the message to the accumulator until the observer is ready to receive the update and/or to send the update to the preprocessor for additional processing. *Pg. 8, lines 11-13.* This update method allows the observer to throttle and/or narrow its scope of attachment to the subject. *Id. at lines 13-14.* In this way, the present invention provides an easily extendible mechanism that allows each individual observer to dynamically control what updates it wishes to be notified of from the subject, and how often it wishes to be notified of these updates by the subject. *Pg. 4, lines 4-6.*

I. Rejections under 35 U.S.C. § 102(e)

A reference can only anticipate a claim if the reference describes each and every element as set forth. *M.P.E.P. § 2131.01.* Applicant respectfully submits that Skinner fails to meet this requirement.

A. Group A (claims 1-5, 7-11, 13-17, and 19-26)

1. The Examiner has acknowledged that Skinner fails to teach criteria based on the attributes of the observer

The Examiner rejected the Group A claims under Section 102(e) in view of Skinner. Applicant notes the Examiner made the exact same rejection based on the exact same reference back in 2005. *Office Action, mailed June 3, 2005 at pg. 2.* As Applicant explained in its first Appeal from that rejection, however, the interest criteria in Skinner is limited to assembling

conditions on the attributes of the subject. *Applicant's Appeal Brief, mailed December 5, 2005 at pg. 11*. The present invention, in contrast, allows the observer to implement and register criteria based on the attributes of the observer. *Id.*

In response to Applicant's first Appeal Brief, the Examiner withdrew the 102(e) rejections and reopened prosecution. The Examiner also explicitly acknowledged that Skinner fails to teach at least three claim elements, namely: "the configuration information comprising an attribute of the observer" in claim 1, "to selectively communicate the update information to the observer based on the configuration information" in claim 10, and "the configuration information comprising an attribute of the observer" in claims 13 and 19 *Office Action, mailed July 18, 2006 at pg. 5 and pg. 13; see also Id. at pg 2* (remarking that Applicant's arguments about Skinner were "fully considered and . . . persuasive").

Put simply, after reading Applicant's first Appeal Brief, the Examiner acknowledged that Skinner fails to teach at least one element in every claim. Those elements are still present in the current claims. For this reason, the Examiner's rejections under Section 102(e) must be overturned. *M.P.E.P. § 2131.01*.

2. Skinner fails to teach observer created and controlled aspect objects.

In conventional subject-observer systems, each subject maintained a list of observers and, when the subject's state changed, notified each observer of its state change. This notification occurred regardless of the observer's particular interest or the observer's capacity to handle the update. The observers would then request the updated information, again regardless of the observer's particular interest or the observer's capacity to handle the update. The subject's updates are then issued, only to be discarded by that observer. This drawback made conventional designs inflexible and inefficient, particularly in modern "distributed" systems because the remote messages are comparatively slow.

With this in mind, Applicant notes that Skinner is merely an example of the traditional subject-observer system discussed in more detail in Applicant's Background section at pgs. 3-4.

As such, it fails to teach any method for an observer to implement and register criteria based on the attributes of the observer, *see Office Action mailed July 18, 2006 at pg. 5*, much less the claimed observer-created and controlled *aspect objects*. That is, in the present invention, each observer creates one or more aspect objects (i.e., both data and the procedures to manipulate that data) and then issues instructions to attach the aspect object(s) to the subject. These observer-created and controlled aspect objects, in turn, provide the observer with virtually unlimited flexibility to specify what specific type of information it wants, in what form the information it wants that information sent, and how frequently it wants the information to be sent.

Accordingly, the Examiner's rejections under 102(e) are also improper because Skinner fails to teach "an aspect object created by the observer and adapted for attachment to the subject, the aspect object further adapted to receive the configuration information from the observer and to selectively communicate the update information to the observer based on the configuration information" in claim 1; "an aspect object created by the observer and attached to the subject code segment, the aspect object configured receive the update message from the subject code segment and to selectively communicate update information to the observer based at least in part upon an attribute of the observer and the received information" in claim 10, "in an observer, generating instructions to create an aspect object, communicating configuration information from the observer to the aspect object, the configuration information comprising an attribute of the observer; [and] attaching the aspect object to a subject" in claims 13 and 19; and "in an observer object, generating instructions to create an aspect object; communicating configuration information from the observer object to the aspect object, the configuration information including a desired type indicator and a desired communication rate indicator; attaching the aspect object to the subject object" in claim 23. *M.P.E.P. § 2131.01*.

B. Group B (claims 4-5 and 23)

In addition to the elements identified in Section (I)(A), claims 4-5 further require that the object register "a communication speed indication," and claim 23 further requires "communicating configuration information from the observer object to the aspect object, the

configuration information including . . . a desired communication rate indicator” and “using the desired communication rate indicator to determine whether the object is ready to receive the modified update.” The Examiner reads this language against a variety of vague references to “interest criteria.” However, Applicant submits none of the vague references teach registering any criteria based on the attributes of the observer, much less the specific criteria of a desired communication rate indicator.

II. Rejections under Section 101

A. Group C (claims 19-22)

In the Office Action mailed February 6, 2007, the Examiner rejected claims 19-22 as being directed to non-patentable subject matter, but indicated that this rejection could be overcome if the claims were “amended to include only the physical computer media and not a transmission media or other intangible or non-functional media.” To put this Application in condition for allowance, Applicant has amended claim 19 to recite a “physical, computer readable storage media.”

The Examiner did not repeat the Section 101 rejections in the Advisory Action mailed April 24, 2007. Accordingly, Applicant reserves the right to comment in more detail on this point if the Examiner is continuing to maintain these rejections.

8. Claims Appendix

1. A data processing apparatus, comprising:

a subject;

an observer adapted to generate configuration information, the configuration information comprising an attribute of the observer; and

an aspect object created by the observer and adapted for attachment to the subject, the aspect object further adapted to receive the configuration information from the observer and to selectively communicate the update information to the observer based on the configuration information.

2. The apparatus of claim 1, wherein the configuration information includes a desired type indication.

3. The apparatus of claim 2, wherein the aspect object selectively discards the update information in response to the desired type indication.

4. The apparatus of claim 1, wherein the attribute of the observer includes a communication speed indication.

5. The apparatus of claim 4, further comprising an accumulator that accumulates the update information in response to the communication speed indication.

6. (Cancelled)

7. The apparatus of claim 1, wherein the subject generates the state change indication and communicates the state change incitation to the aspect object.

8. The apparatus of claim 1, further comprising a preprocessor that selectively modifies the update information in response to the configuration information.

9. The apparatus of claim 1, further comprising:

a first processor;

a first memory coupled to the first processor, wherein the subject and the aspect object reside within the first memory;

a second processor; and

a second memory coupled to the second processor, wherein the observer resides within the second memory.

10. A distributed computer system, comprising:

a) a subject code segment resident on a first computer node, the subject code segment adapted to produce an update message;

b) an observer resident on a second computer node, the first computer node being in operable communication with the second computer node; and

c) an aspect object created by the observer and attached to the subject code segment, the aspect object configured to receive the update message from the subject code segment and to selectively communicate update information to the observer based at least in part upon an attribute of the observer and the received information.

11. The distributed computer system of claim 10, wherein the subject code segment comprises a network management software program, and wherein the observer code segment comprises a graphical user interface.

12. (Cancelled)

13. A method of communicating updates from a subject to an observer, comprising:
- in an observer, generating instructions to create an aspect object;
 - communicating configuration information from the observer to the aspect object, the configuration information comprising an attribute of the observer;
 - attaching the aspect object to a subject;
 - notifying the aspect object of an update;
 - interrogating the update to generate to generate update information; and
 - selectively communicating the update to the observer based on a comparison between the update information and the configuration information.
14. The method of claim 13, further comprising selectively modifying the update information based on a comparison between the update and the configuration information.
15. The method of claim 13, further comprising accumulating the update information based on the configuration information.
16. The method of claim 13, further comprising sending updated configuration information from the observer to the aspect object, wherein the updated configuration information comprises an updated attribute of the observer.
17. The method of claim 16, wherein the updated attribute of the observer includes a system load indication.

18. (Cancelled)

19. A computer program product, comprising:

(a) a program configured to perform a method of controlling updates between a subject and an observer, the method comprising:

in an observer, generating instructions to create an aspect object;

communicating configuration information from the observer to the aspect object, the configuration information comprising an attribute of the observer;

attaching the aspect object to a subject;

notifying the aspect object of an update;

interrogating the update to generate to generate update information; and

selectively communicating the update to the observer based on a comparison between the update information and the configuration information; and

(b) a physical, computer readable storage media bearing the program.

20. The computer program product of claim 19, wherein the method further comprises selectively modifying the update based on a comparison between the update information and the configuration information.

21. The computer program product of claim 19, wherein the method further comprises accumulating the update information based on a comparison between the update information and the configuration information.

22. The computer program product of claim 19, wherein the method further comprises sending updated configuration information from the observer to the aspect.

23. A method of maintaining data consistency between a subject object on a first computer system and an observer object on a second computer system, comprising:

- a) in an observer object, generating instructions to create an aspect object;
- b) communicating configuration information from the observer object to the aspect object, the configuration information including a desired type indicator and a desired communication rate indicator;
- c) attaching the aspect object to the subject object; and
- d) in response to a state change indication from the subject:
 - 1) sending an update to the aspect;
 - 2) interrogating the update to generate an update type indicator;
 - 3) modifying the update based on a comparison between the update type indicator and the desired type indicator to produce a modified update;
 - 4) sending the modified update to an accumulator;
 - 5) using the desired communication rate indicator to determine whether the object is ready to receive the modified update; and
 - 6) communicating the modified update to the observer.

24. The apparatus of claim 1, wherein subject comprises an object and wherein the observer comprises an object.

25. The method of claim 13, wherein subject comprises an object and wherein the observer comprises an object.

26. The computer program product of claim 19, wherein subject comprises an object and wherein the observer comprises an object.

9. Evidence Appendix

N/A

10. Related Proceedings Appendix

Cover to Applicant's first Appeal Brief, mailed March 31, 2006.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Barsness, et al.

Serial No.: 09/801,309

Filed: March 7, 2001

For: SUBJECT/OBSERVER UPDATE CONTROL METHOD
AND APPARATUS

Group Art Unit: 2145

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**APPEAL BRIEF IN SUPPORT OF APPEAL
FROM THE PRIMARY EXAMINER TO THE BOARD OF APPEALS**

Sir:

Applicant(s) herewith submit an appeal brief in support of the appeal to the Board of Appeals from the decision dated June 3, 2005, of the Primary Examiner finally rejecting claims 1-23. An appeal brief was previously filed December 2, 2005, but was rejected as noncompliant with 37 CFR 41.37. Applicant believes an appeal brief fee is not required; however, if the referenced deposit account was not charged in the previous appeal, the referenced deposit account should be charged at this time.

The appeal brief fee of \$500.00 is:

☐ Enclosed.

☒ Not required. (Fee paid in prior appeal.)

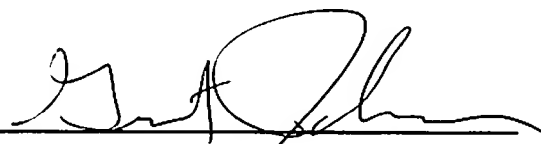
☐ Charged to Deposit Account No. **09-0465**. A duplicate copy of this sheet is enclosed.

Docket No.: ROC920010075US1 24
Serial No.: 09/801,309

For each of the foregoing reasons, Appellant submits that the Examiner's final rejections of claims 1-5, 7-11, 13-17, and 19-26 were erroneous, and respectfully requests reversal of these decisions.

Date: July 2, 2007

Respectfully submitted,

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